Frantic Team Effort Provided Vital Che

RADIATION MEDICINE WAS FLOWN TO AREA

259,000 Containers of Potassium Iodide Were Manufactured to Counter Peril to Thyroid

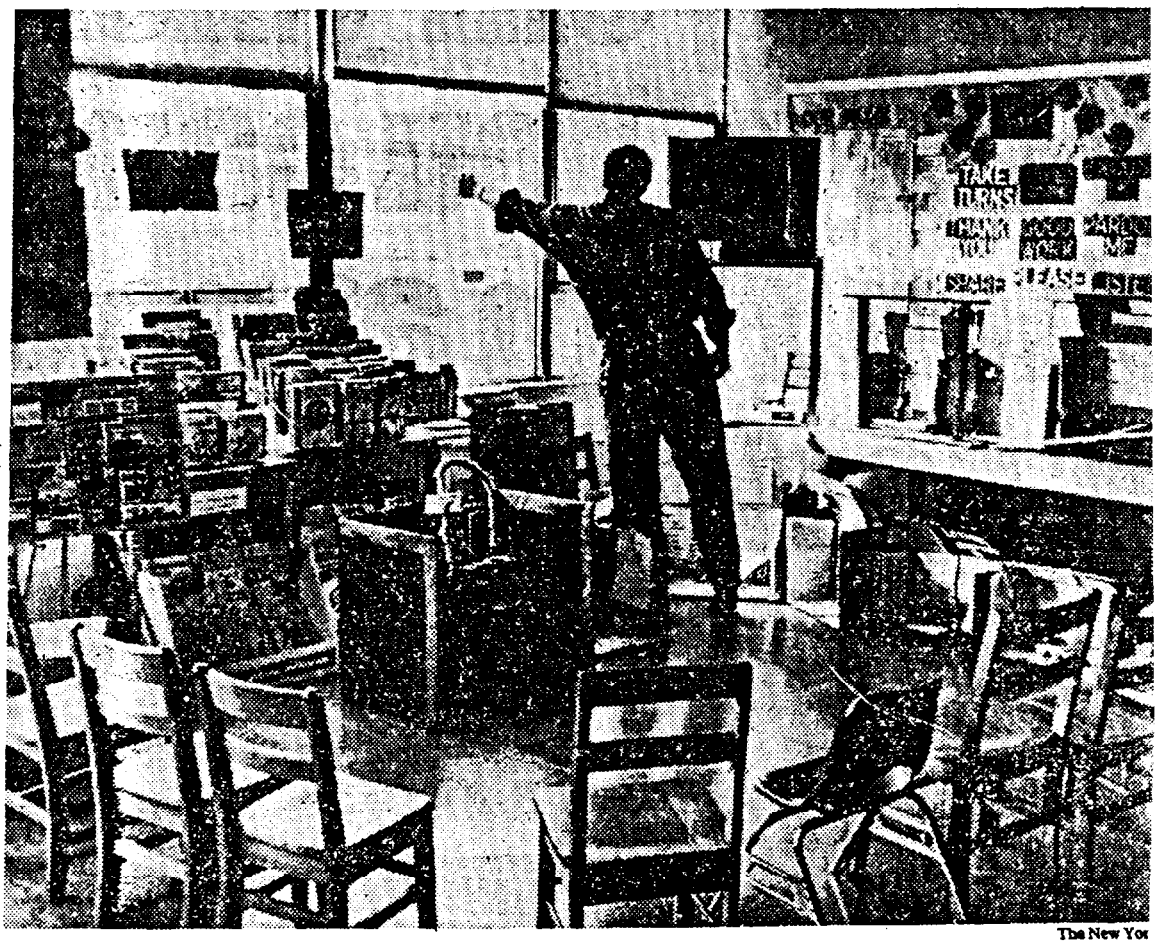
By ROBERT REINHOLD
Special to The New York Times

WASHINGTON, April 3 — It was late last Saturday night, and an Air Force C-130 jet transport was revving its engines on the windswept runway at Scott Air Force Base in Bellville, Ill. Soon it had loaded an unusual chemical cargo, concocted hastily at a nearby laboratory, and was airborne for Harrisburg, Pa.

The jet played a little-known, but potentially crucial, role in the unfolding Pennsylvania nuclear drama. For it carried thousands of little bottles of potassium iodide, to be taken, two drops a day, by every resident of the area near the stricken Three Mile Island nuclear plant in case of a major dispersion of radioactive material to avoid cancer of the thyroid gland.

Through the breakneck efforts of the Food and Drug Administration, 259,000 bottles of the medicine are on hand today in a warehouse in Middletown. But the frantic hours spent in brewing and shipping the chemical underscored the comparative lack of readiness on the part of the authorities in coping with the potential of a major nuclear power plant disaster.

Authorities on the biological effects of radiation have been warning for some time that the radioactive isotope iodine 131, a byproduct of the nuclear process, would pose a major public health risk in an accident. If inhaled, large amounts of the iodine accumulates in the thyroid and sometimes causes cancer in that small throat gland that regulates body growth. But a small dose of potassium iodide, taken before exposure to radiation, saturates the gland with normal iodine and effectively blocks the iodine 131, which is excreted in in the urine.



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Custodian at Melrose Elementary School in Harrisburg, Pa., checks classrooms for readines

Almost None on Hand

However, when the danger of a major radiation release loomed large last weekend, there was almost no potassium iodide near the stricken plant, nor were any of the regular manufacturers equipped to produce it in a hurry.

This realization led to a hectic weekend involving the F.D.A.'s Bureau of Drugs, the Air Force, the Army, the state police in two states, private chartered jets and a small company in southern New jersey that makes medicine droppers and just happened to have 250,000 of the right size in stock.

The staff at the Bureau of Drugs, led by its deputy director, Jerome Halperin, began making phone calls to large drug makers. They finally found one, Mallinckrodt Inc., of St. Louis, that agreed to take the order orally. When the final go-ahead was issued at 3 A.M. Saturday, the company flew in the necessary ingredients to its plant in Decatur, Ill., and immediately started production. By that night, 11,000 one-ounce bottles were on the way by Air Force jet to Pennsylvania.

But Mallinckrodt did not have enough little bottles. So it loaded the rest of the medicine into huge 55-gallon drums, and these were shipped by jet to another drug maker, Parke Davis & Company in Detroit. There, 93,000 more bottles were filled and quickly shipped, with more to follow.

No Medicine Droppers

But then someone realized that the bottles had no medicine droppers. The medicine is taken orally by the drop. Late Saturday, the state police in New Jersey tried to find executives of Dougherty

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The New York Times/Neal Boenzi

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"We had 'em," said Norbert Foglietta, president of the company, in a telephone interview from Buena. An Army truck rolled up to the plant and rolled out with 210,000 medicine droppers, and 40,000 more followed yesterday.

Until now, the medicine has been administered only to persons working in the troubled power plant.

The F.D.A. acted after consulting Dr. Eugene Sanger of the University of Cincinnati and other experts. Dr. Sanger headed a committee that studied the potential effects of radioative iodine on the thyroid for the National Council on Radiation Protection and Measurements, a private group of scientists.

Prof. Frank Von Hippel, a physicist at Princeton, who studied the consequences of nuclear accidents for the American Physical Society, said today in a telephone interview that he felt nationwide stockpiling of potassium iodine was needed.

However, he cautioned against drinking iodine, which is poisonous, or eating large amounts of iodized salt. Potassium iodide is available in drugstores for asthma and other lung disorders, but at much higher doses than is recommended

Large Dose of Radiation: It's All in a Day of Work

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Regulatory Commission. Water is taken from a sampling room in the auxiliary building that adjoins the reactor.

In routine procedures, the worker wears rubber gloves, a plastic apron and a face shield if he is particularly cautious. Ordinarily, the water is only slightly radioactive, and exposure to radiation is minimal.

Last Wednesday, Mr. Houser was exposed to radiation from three sources. The floor of the building was covered with casual puddles of radioactive water. Background radiation in the room was measured at about 10 rem (roentgen equivalent man). The water in the cooling system was positively lethal.

"We checked some of the readings," Mr. Houser said, "and they were greater than 1,000 rem."

The heavy clothing he wore did not protect him from airborne radiation, nor was it designed to do so. The penetrating power of gamma rays is too great. The clothes were supposed to protect him from contamination, which he believes they did. The only defense against radiation is getting clear of it as quickly as possible.

'No Room for Error'

"It's hard to say how long I was in there, maybe five minutes total," Mr. Houser said. "You know the radiation is there, and all you can do is work three times as fast, then get out. There's no room for error. I've been working with this for 10 years, and I have a pretty thorough familiarization. I'm not saying I'm brave. If you understand, your mind is at ease."

Mr. Houser is back on the job at Three Mile Island, although he is not working in the vicinity of high radiation. He was cleared to return to work so soon after overexposure because Federal guidelines are based on the calendar, not on the body.

Each calendar quarter a nuclear industry employee is permitted to absorb no more than three rem. Each year he is allowed no more than five. The yearly figure is flexible.

Any unused portion of the yearly total of five rem may be carried forward, just as an investor on Wall Stree carries forward a long-term capita loss. Mr. Houser, for example, is 3 years old. Since the rem savings sys tem begins when an individual is 1 years old, his nuclear bank contains 7 rem minus whatever radiation he ha absorbed in his career.

Last Wednesday, he received a dos of approximately four rem. That ex ceeded his quarterly quota, but th quarter ended three days later. Th four rem did not exceed his yearl quota of five. Officials did not eve have to consider how much he had i his bank.

"It's a fact of life," said Mr. Elsas er, "that everything is based on qua terly exposure. It's a matter of how yo set up your bookkeeping. Once th quarter is over, the accumulation i considered removed, and it so hap pened April 1 began the next quarte It's a matter of coincidence that th accident occurred so close to the end the quarter. When April 1 came, he wa assigned back to work in the radiatio field.

No Body Contamination

Mr. Houser said that he had been a sured by various metering systen that there was no contamination of h body. He wonders what the effect of h exposure to radiation might be in 20 30 years, but he insists that he is "n really concerned."

Since the accident, he has given a l of thought to the nuclear power pr gram and has lost no faith. "I believe nuclear power 100 percent," he sai He has faith in the Metropolitan Edis Company, in the Nuclear Regulato Commission, in the people who wo with him, in the regulations that s four rem is a dose of radiation he c live with.

His only concern at the moment, said, is that the names of his two ch dren should appear in print. His daug ter, Renee, is 4 years old. His so Steve, turned 10 this last Saturda celebrating his birthday on the last d of the first quarter of the calend year.

Governor in an Uncommon Crisi

Richard Louis Thornburgh

By B. DRUMMOND AYRES Jr.